

ONTARIO MINISTRY OF ENVIRONMENT



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Ministry of the ENVIRONMENT

Report On

WATER POLLUTION AND SANITARY SURVEY

IMPROVEMENT DISTRICT OF BEARDMORE

District of Thunder Bay

May 23 and June 4, 5, & 6, 1973

Sanitary Engineering Branch

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MINISTRY OF THE
ENVIRONMENT



DISTRICT ENGINEERS BRANCH - FIELD INVESTIGATIONS

MUNICIPALITY - DISTRICT OF THUNDER BAY
IMPROVEMENT DISTRICT OF BEARDMORE

May 23 and
DATE - June 4, 5, & 6, 1973

MATTER INVESTIGATED - WATER POLLUTION AND SANITARY SURVEY

REPORT BY - J. Gilhooly - San. Eng. Branch AT REQUEST OF - Routine

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MINISTRY OF THE ENVIRONMENT

Municipality.Improvement.District.of.....Date of Inspection..June.1973
Beardmore

Re:...Water.Pollution.and.Sanitary.Survey.....

Field Inspection by..J..W..Gilhooly.....Report by..J..W..Gilhooly.....
Technologist

INTRODUCTION

A water pollution survey was conducted in the community of Beardmore which lies within the Improvement District of Beardmore on May 23, 1973 for the purpose of determining and recording sanitary conditions as related to sewage disposal practices, and their affects upon the local streams which flow through the area.

A sanitary survey of several of the private well supplies within the community was also performed. Samples were collected on a random basis on June 4, 5, and 6, 1973 for bacteriological examination.

Several of the homeowners were interviewed during the sanitary survey regarding domestic water supply and sewage disposal problems within the community.

GENERAL

The community of Beardmore is located approximately 140 miles northeast of the City of Thunder Bay on Highway No. 11. The community was established as a result of gold mining operations in the area. However, in recent years since the closing of the local mines the community has been economically dependant upon pulpwood cutting operations and the tourist trade.

There are roughly 220 homes in Beardmore which serve a population of approximately 750 persons. The population has not changed significantly for the past several years. There are no municipal water or sewage works systems within the community.

OBSERVATIONS

Soil conditions throughout the community consist of mixed coarse sand and gravel. No rock outcropping or cohesive soils were noted within the townsite.

All of the roads throughout the community are constructed of graded gravel with storm runoff being directed to the local roadside ditches. The only exception is the Main Street (Hwy. No. 11) which is paved with asphalt and served with storm sewers and catch basins.

SEWAGE DISPOSAL

Reportedly, the storm sewers serving Main Street are constructed to discharge storm runoff to a local creek flowing parallel to Garnet Drive, as well as a second outfall which is directed to the Blackwater River at the west end of Douglas Avenue.

Both of these storm sewer outfalls (locations #6 and #12) were sampled for bacteriological examination and found to contain large numbers of coliform organisms. Several of these coliforms were of fecal origin in each case.

Numerous private sewage or septic tank outfalls were noted along the east bank of the Blackwater River. The approximate locations of these outfalls are designated on the appended

water pollution survey map. At the time of the field inspection little or no discharge was occurring at the majority of these private outfalls. However, visible indications of domestic sanitary wastes were evident along the riverbank immediately below most of the outfalls.

It is apparent that several of the residents whose homes are located near the river bank had decided to install septic tank outfalls to the river as a matter of convenience rather than incurring the additional expense and effort necessary to construct a proper tile field disposal system. Reportedly, there are also several homes located on the south side of McKenzie Street and on the north side of Heron Street, whose septic tank effluents discharge to a four inch diameter collector main which is located along the centre of the residential block. This sewer discharges the collected effluents to the Blackwater River at outfall location No. 15 on the appended map. The bacteriological examination results of a sample collected from this outfall revealed the presence of an extremely high concentration of fecal coliform organisms, which is characteristic of raw sanitary or septic tank wastes.

The septic tank and tile field disposal system serving the new elementary school located on the east side of the Ontario Hydro transmission line right of way, was also noted to be malfunctioning. The children's playground is located on the opposite side of the school and the children are, reportedly, instructed by the teaching staff to avoid playing at the rear of the school building.

WATER SUPPLY

In excess of 100 domestic water samples were collected from homes and commercial establishments throughout the community for the purpose of gaining a representative assessment of the bacteriological quality of the ground water throughout the area. Approximately 25 per cent of the wells sampled contained total coliform organisms with counts ranging from 4 to 10,100 organisms per 100 ml. of sample. Only one of these wells (location #77) contained coliforms which were of fecal origin.

Although it is difficult to determine exactly the number of wells presently in service in Beardmore there are apparently a greater number, particularly sand points, than in 1970 at which time a former ground water survey was conducted by O.W.R.C. staff. A number of the residents interviewed stated that due to the frequent problem of ground water shortages which occurs during the winter months, new ground water supplies had been developed by some of those persons affected by the shortages who were previously obtaining water from the wells of neighbours.

During the sanitary survey a sample was collected at location no. 40 to obtain a representative analysis of the chemical properties of the ground water in the area.

The laboratory results indicate that the ground water quality is generally satisfactory and meets this Ministries Drinking Water Objectives in all but one area. Turbidity, a parameter which is based primarily on aesthetic rather than sanitary considerations, was slightly in excess of these objectives.

LOCAL WATERCOURSES

The two local streams which flow through the north end of the townsite are without proper names and will be referred to for purposes of this report as "North End Creek" (the most northerly stream), and "Central Creek" (located south of North End Creek).

Both of these streams flow in a northerly direction and discharge to the Blackwater River. Samples were collected from these streams at locations two to eight inclusive as shown on the appended map.

1.) North End Creek

North End Creek does not pass through the developed area of Beardmore. It was, therefore, expected that domestic wastes would not be reaching this watercourse. Samples collected at stream locations 3 and 4 contained extremely low fecal coliform counts indicating that no impairment of the stream was occurring between these sample locations.

An additional sample collected for chemical analysis at location No. 3 revealed a B.O.D. (biochemical oxygen demand) of only 0.6 ppm. This demand is normal for stream waters and further suggests than no impairment of the stream water quality is occurring.

2.) Central Creek

Central Creek, unlike North End Creek, does flow through developed areas of the townsite and is known to receive sanitary wastes via a storm sewer outfall located on the

east side of Hwy. No. 11 adjacent to Garnet Drive.

A sample collected on the east side of the C.N. Railroad at location No. 2, where the stream enters the community, was free of fecal contamination.

Samples collected from the storm sewer outfall for bacteriological examination and chemical analysis at location no. 6 contained a fecal coliform count of 1,700,000 organisms per 100 ml. of sample and a B.O.D. of 65 ppm confirming that domestic wastes are gaining access to the storm sewer.

The results of dye testing performed at one commercial establishment located on Main Street were positive confirming that sanitary wastes were being discharged directly to the storm sewer. Subsequently, samples collected from locations five and seven which are situated immediately upstream and downstream respectively of the Main Street (Hwy. No. 11) storm sewer outfall, show that a large increase from 8 to 1300 fecal coliforms per 100 ml. of sample was occurring between these locations. Municipal officials of the Improvement District of Beardmore suggested that several other business establishments located along Main Street may also be discharging sanitary wastes to this storm sewer.

The B.O.D. concentrations in samples obtained upstream and downstream of the community indicate that the wastes being discharged to date have caused only a minor degree of impairment to Central Creek. However, in order to prevent increased degradation corrective action must be taken to eliminate domestic waste discharges to the stream.

3.) Blackwater River

Bacteriological examination results of samples collected from the river at locations 9, 10, 14, and 16 clearly indicate that domestic wastes from the community are adversely affecting the water quality of the Blackwater River.

A sample collected from location no. 9 upstream of Beardmore contained a total coliform count of 80 of which none were of fecal origin. However, samples collected from within the community at locations 10, 14 and 16 contained total coliform counts of 6,300; 70,000' and 74,000 organisms per 100 ml. of sample respectively. The corresponding fecal coliform counts were 240,212 and 130 organisms per 100 ml. of sample.

These results, when compared to those obtained from sample location no. 9, indicate a significant increase in bacteriological contamination.

Locations 9 and 16 were resampled for chemical analysis to determine the effects which the sanitary waste discharges were having on the river in terms of biochemical oxygen demand. It was found that a net increase of only 0.2 ppm B.O.D. was present in the river downstream of the community due to the sanitary waste discharges. However, it is recognized that further degradation of the river water quality may occur if the practice of discharging sanitary wastes to local watercourses is permitted to continue.

REFUSE DISPOSAL

A municipal garbage collection service serves the residential area of the community on a weekly basis and the commercial zone twice weekly.

The municipality also operates a sanitary landfill disposal site in accordance with the requirements of this Ministry's Waste Management Branch. The site is located on the north side of the Blackwater River.

SEPTIC TANK SERVICES

A municipal septic tank pumpout service is available to the residents of Beardmore. Such wastes are disposed of in a section of the Municipality's sanitary landfill disposal site according to the requirements of this Ministry's Waste Management Branch.

DISCUSSION

The consulting engineering firm of W. L. Wardrop and Associates Limited were retained in 1968 by the former Ontario Water Resources Commission to investigate the feasibility and cost of constructing communal water and sewage works facilities under the O.W.R.C. Provincial Projects Scheme.

To this end the consultant conducted a preliminary reconnaissance survey of Beardmore and subsequently prepared a Conceptual Brief which was submitted to the Commission in February of 1969.

Following the completion of the Conceptual Brief the consultant was authorized to conduct further studies concerning proposals for water supply and sewage treatment and disposal facilities. Subsequent to these studies a detailed design report

of the proposal for each of these facilities was prepared.

Briefly, the Design Report on water supply recommended that a 100 UPSGPM package plant incorporating complete treatment (flocculation, settling, filtration, and chlorination) be utilized with the Blackwater River being the source of supply.

The Design Report on Sewage Treatment recommended the installation of a package plant similar to the Smith and Loveless Model 36-RE-91"Oxygest" extended aeration plant.

The above proposals have been presented to the members of council of the Improvement District of Beardmore and tentative rates have been approved by this Ministry.

Both proposals were awaiting Ontario Municipal Board approval at the time of preparation of this report.

SUMMARY

A sanitary survey of several of the private well supplies, and a water pollution survey with regard to sewage disposal practices, were conducted in the community of Beardmore during the months of May and June 1973.

Approximately 25 per cent of the wells sampled contained coliform organisms. One of these wells contained coliform organisms of fecal origin.

Roadside ditches throughout the community were generally dry.

While several of the septic tank and tile field systems within the community are operating properly a significant number are either discharging domestic wastes directly to the Blackwater River, or are connected to storm sewers with eventual discharge to the river.

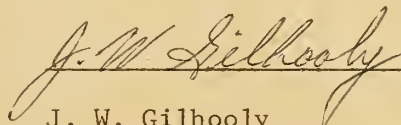
Samples collected from various locations along the Blackwater River indicate that the sanitary waste discharges are detrimentally affecting it's water quality.

RECOMMENDATIONS

The primary reason for conducting these surveys is to confirm the need for each of a communal water supply and sewage treatment facility.

Therefore, the only recommendation presented is that the provincial water and sewage works programmes which were initiated prior to the conducting of these surveys should continue to proceed.

JWG/br


J. W. Gilhooly
Sanitary Engineering Branch

IMPROVEMENT DISTRICT OF BEARDMORE

SANITARY SURVEY

Domestic Well Water Supply Sample Results

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination Counts Per 100 ML of Sample</u>		
		<u>Fecal Coliforms</u>	<u>Fecal Streptococci</u>	<u>Total Coliforms</u>
I	Private Residence	0	0	0
2	Separate School	0	0	0
3	Private Residence	0	0	0
4	Private Residence	0	0	0
5	Hospital	0	0	0
6	Private Residence	0	0	0
7	Private Residence	0	0	0
8	Private Residence	0	0	0
9	Private Residence	0	0	0
10	Private Residence	0	0	0
11	Private Residence	0	0	32
12	Private Residence	0	0	0
13	Serves 3 Private Residences	0	0	8
14	Private Residence (Infiltration well near North End Creek)	0	0	128
15	Private Residence	0	0	4
16	Private Residence	0	0	0
17	Private Residence	0	0	4

IMPROVEMENT DISTRICT OF BEARDMORE
 SANITARY SURVEY
Domestic Well Water Supply Sample Results

Page 2

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination</u> <u>Counts Per 100 ML of Sample</u>		
		<u>Fecal</u> <u>Coliforms</u>	<u>Fecal</u> <u>Streptococci</u>	<u>Total</u> <u>Coliforms</u>
18	Private Residence	0	0	0
19	Private Residence	0	0	0
20	Private Residence	0	0	0
21	Texaco Service Stn.	0	0	288
22	Esso Service Stn.	0	0	0
23	Main Street Grocery Store	0	0	0
24	Del-Mar Restaurant	0	0	8
25	Sample Destroyed	-	-	-
26	Private-Serves Two Residences	0	0	8
27	Maple Leaf Restaurant	0	0	0
28	Sample destroyed	-	-	-
29	Pommier Variety Store	0	0	0
30	Josie Confectionary (serves 6 residences)	0	0	0
31	Crest Wind Hotel	0	0	0
32	Private Residence	0	4	12
33	Beardmore Shoe Repair	0	0	0
34	Canadian Legion	0	0	12

IMPROVEMENT DISTRICT OF BEARDMORE
SANITARY SURVEY
Domestic Well Water Supply Sample Results

Page 3

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination</u> <u>Counts Per 100 ML of Sample</u>		
		<u>Fecal</u> <u>Coliforms</u>	<u>Fecal</u> <u>Streptococci</u>	<u>Total</u> <u>Coliforms</u>
35	Private Residence	0	0	0
36	Doctor's Office Main Street	0	0	0
37	Gulf Service Stn.	0	0	0
38	Chalet's Grocery	0	0	0
39	Nova Scotia Bank	0	0	0
40	Private Residence	0	0	0
41	Private Residence	0	0	48
42	Private Residence	0	0	24
43	Private Residence	0	0	0
44	Private Residence	0	0	0
45	Private Residence	0	0	0
46	Private Residence	0	390	16
47	Private Residence	0	0	0
48	C.N. Mobile Home	0	0	0
49	Private Residence	0	0	0
50	Private Residence	0	0	0
51	Private Residence	0	0	0
52	Private Residence	0	0	0
53	Private Residence	0	0	1,600
54	Private Residence	0	0	0
55	Private Residence	0	0	12
56	Private Residence	0	0	0

IMPROVEMENT DISTRICT OF BEARDMORE
SANITARY SURVEY
Domestic Well Water Supply Sample Results

Page 4

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination Counts Per 100 ML of Sample</u>		
		<u>Fecal Coliforms</u>	<u>Fecal Streptococci</u>	<u>Total Coliforms</u>
57	Private Residence	0	0	1,010
58	Private Residence	0	0	0
59	Private Residence (Serves three homes)	0	0	0
60	Private Residence	0	0	0
61	Private Residence	0	0	0
62	Private Residence (Serves 2 Residences)	0	0	0
63	Private Residence (Serves 2 Residences)	0	0	0
64	Private Residence	0	0	0
65	Private Residence	0	0	0
66	Private Residence	0	0	0
67	Private Residence	0	0	0
68	Gates Grocery	0	0	96
69	Private Residence	0	0	0
70	Public School	0	0	0
71	Private Residence	0	0	0
72	Private Residence	0	0	0
73	Private Residence	0	0	0
74	Private Residence	0	0	240
75	Private Residence	0	0	0
76	Private Residence	0	0	0

IMPROVEMENT DISTRICT OF BEARDMORE
 SANITARY SURVEY
Domestic Well Water Supply Sample Results

Page 5

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination</u> <u>Counts Per 100 ML of Sample</u>		
		<u>Fecal</u> <u>Coliforms</u>	<u>Fecal</u> <u>Streptococci</u>	<u>Total</u> <u>Coliforms</u>
77	Private Residence	350	44	10,100
78	Private Residence	0	0	920
79	Private Residence	0	0	0
80	Private Residence	0	0	0
81	Private Residence	0	4	0
82	Private Residence	0	0	4
83	Private Residence	0	0	0
84	Private Residence	0	0	0
85	Private Residence	0	0	0
86	Private Residence	0	0	0
87	Private Residence	0	0	0
88	Private Residence	0	0	0
89	Private Residence	0	0	0
90	Private Residence	0	0	0
91	O.P.P. Office (Serves 2 Residences	0	0	0
92	Private Residence	0	0	0
93	Private Residence	0	0	100
94	Private Residence	0	0	0
95	Private Residence	0	0	0
96	Private Residence	0	0	0
97	Private Residence	0	0	0

IMPROVEMENT DISTRICT OF BEARDMORE
SANITARY SURVEY
Domestic Well Water Supply Sample Results

Page 6

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination</u> <u>Counts Per 100 ML of Sample</u>		
		<u>Fecal</u> <u>Coliforms</u>	<u>Fecal</u> <u>Streptococci</u>	<u>Total</u> <u>Coliforms</u>
98	Private Residence	0	0	0
99	Private Residence	0	0	0
100	Private Residence	0	0	8
101	Private Residence	0	0	0
102	Private Residence	0	0	0
103	Private Residence	0	0	0
104	Private Residence	0	12	350
105	Private Residence	0	0	0
106	Private Residence	0	0	0
107	Private Residence	0	0	36
108	Private Residence	0	0	0

Laboratory results of a sample collected at location #40 for routine
chemical analysis:

Hardness as Ca CO ₃	116
Alkalinity as Ca CO ₃	155
Iron as Fe	0.25
Chloride as Cl.	1
pH at Lab	8.3
Apparent Color Units	<5
Turbidity Units	2.4

IMPROVEMENT DISTRICT OF BEARDMORE

WATER POLLUTION SURVEY

Stream And Outfall Sample Results

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination Counts Per 100 ML of Sample</u>		
		<u>Fecal Coliforms</u>	<u>Fecal Streptococci</u>	<u>Total Coliforms</u>
1	Ditch on east side of CN tracks	<4	64	1000
2	Central Creek near tracks	<4	<4	70
3	North End Creek at CN culvert	4	<4	164
4	North End Creek at Hwy. No. 11	<4	4	144
5	Central Creek Upstream of Main Street Storm Sewer Outfall	8	12	40
6	Discharge from Main Street storm sewer	1,700,000	230,000	56,000,000
7	Central Creek down- stream of Main Street storm sewer outfall	1,300	372	91,000
8	Mouth of Central Creek	1,300	300	46,000
9	Blackwater River at Hwy. No. 11 bridge	<4	<4	80
10	Blackwater River - North side of outdoor rink	240	20	6,300
11	Sewage Outfall near fire station	31,000,000	740,000	2,200,000,000
12	Storm sewer at foot of Douglas Avenue	1,300	<4	350,000

IMPROVEMENT DISTRICT OF BEARDMORE
WATER POLLUTION SURVEY
Stream And Outfall Sample Results

Page 2

<u>Sample No.</u>	<u>Location</u>	<u>Bacteriological Examination Counts Per 100 ML of Sample</u>		
		<u>Fecal Coliforms</u>	<u>Fecal Streptococci</u>	<u>Total Coliforms</u>
13	Ditch south of outdoor rink	4	4	144
14	Blackwater River north of John St.	212	276	70,000
15	Sewage Outfall to Blackwater River	5,400,000	13,100	75,000,000
16	Blackwater River at south end of the community adjacent to CN tracks.	128	36	7,400

<u>Sample No.</u>	<u>Location</u>	<u>Chemical Analysis Results (Concentrations expressed in PPM.)</u>	
		<u>BOD</u>	<u>Suspended Solids</u>
2	Central Creek near CN tracks	0.6	1
3	North End Creek at CN Culvert	0.6	1
6	Discharge from Main Street Storm Sewer	65.	20
8	Mouth of Central Creek	0.8	1
9	Blackwater River at Hwy. No. 11 bridge	1.2	1
16	Blackwater River at south end of community adjacent to CN tracks	1.4	1

IMPROVEMENT DISTRICT OF BEARDMORE

GLOSSARY OF TERMS

Bacteriological Examinations

The presence of fecal coliforms (FC) is indicative of pollution from human or animal excrement. The total coliform count represents the total number of coliform organisms present of both fecal and non-fecal origin.

To further add to the sanitary significance of this indicator system, fecal streptococci counts per 100 ml. of sample were also obtained. Studies have indicated that fecal streptococci are normally present in greater numbers than coliform bacteria in fecal discharges from farm animals, dogs, cats, and various wild animals. In contrast, the feces from man and the wastes in domestic wastewaters contained four times or more fecal coliforms than fecal streptococci.

The OWRC Laboratories employ the Membrane Filter (MF) technique of examination to obtain a direct enumeration of coliform organisms.

Sanitary Chemical Analyses

Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (ppm) and is an indicator of the amount of oxygen required for the stabilization of decomposable organic or chemical matter.

Solids

The value for solids, expressed in parts per million, is the sum of the values for the suspended and the dissolved solids in the water. The concentration of suspended solids is generally the most significant to surface water quality. The effects of suspended solids in water are reflected in difficulties associated with water purification, decomposition in streams and injury to the habitat of fish.

Routine Chemical Analysis of Domestic Water

Hardness as CaCO_3

The term "Hardness" is applied to the soap neutralizing power of a water.

Soap will not cleanse, nor lather, until all of the hardness is precipitated as insoluble salts of the fatty acids.

The soap-neutralizing power, or hardness, is then expressed in terms of an equivalent concentration of calcium carbonate.

Hardness in water is often caused by the natural accumulation of salts from contact with soil and geological formations.

Hard waters have no demonstrable harmful effects upon the health of consumers.

Alkalinity as CaCO_3

Alkalinity is a measure of the power of a solution to neutralize hydrogen ions and is expressed in terms of an equivalent amount of calcium carbonate. It is caused by the presence of carbonates, bicarbonates, hydroxides, and to a lesser extent by borates, silicates, phosphates and organic substances.

In itself, alkalinity is not considered to be detrimental to humans but it is generally associated with high pH values, hardness, and excessive dissolved solids, all of which may be deleterious.

Iron as Fe

The recommended maximum limit for iron in domestic water supplies is 0.3 ppm.

This objective is based on esthetic and taste considerations. Iron and manganese tend to precipitate as hydroxides and stain laundry and porcelain fixtures.

Chloride as Cl

Chlorides are found in practically all natural waters. The chloride concentration in domestic water supplies should not exceed 250 ppm at any time. The primary concern is economic damage rather than public health.

Chlorides in drinking waters are generally not harmful to human beings until high concentrations are reached.

pH

The symbol "pH" is used to designate the logarithm (base 10) of the reciprocal of the hydrogen - ion concentration.

The hydrogen ion is a potential pollutant in itself and is also related intimately to the concentration of many other substances, particularly the weakly dissociated acids and bases.

The hydrogen ion concentration of a raw-water source for domestic water is important in that it affects taste, corrosivity, efficiency of distribution treatment processes such as coagulation, and industrial applications.

Apparent Colour

Apparent colour in water is attributable to both the substances in solution and the effect from suspended solids.

This Ministry's drinking water objectives recommend that apparent colour not exceed 5 units. This objective is based primarily on esthetic rather than sanitary considerations.

Turbidity

The turbidity of water is attributable to suspended and colloidal matter, the effect of which is to disturb clearness and diminish the penetration of light.

Turbidity is measured in standard units, defined in terms of the depth of water to which a candle flame can be clearly distinguished.

The Drinking Water Objective suggested by this Ministry is 1 turbidity unit. This recommended limit is based primarily on esthetic rather than sanitary considerations.

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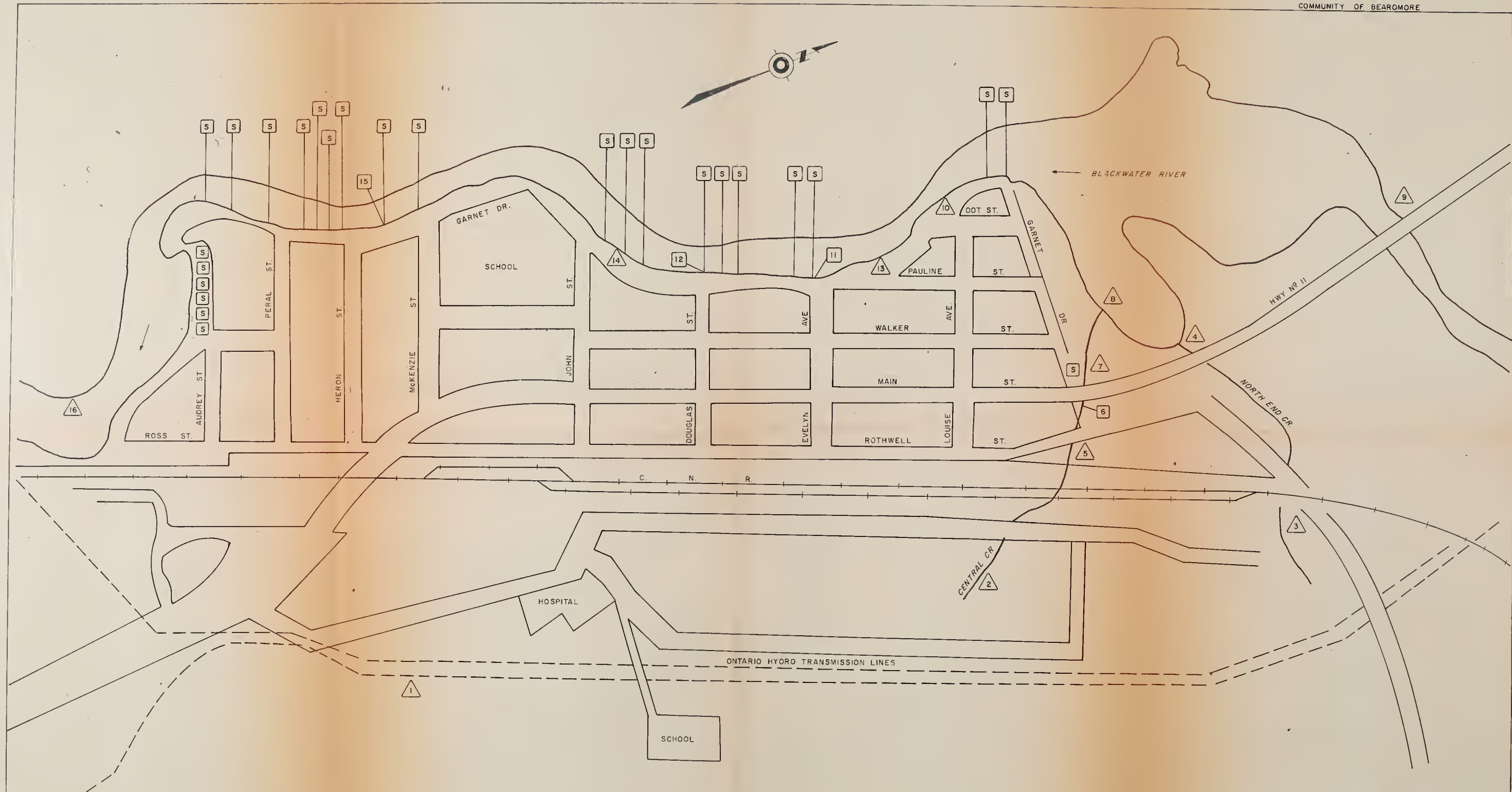
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WATER POLLUTION AND SANITARY SUR-
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BEARDMORE, DISTRICT OF THUNDER BAY
1973.

DATE	ISSUED TO
23/7/74	<i>W. Jackman</i> <i>118 Cedar St., Sud.</i>

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COMMUNITY OF BEARDMORE	
WATER POLLUTION SURVEY - SAMPLING LOCATIONS	
MAY 23, 1973	
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BEARDMORE, DISTRICT OF THUNDER BAY

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Report on water
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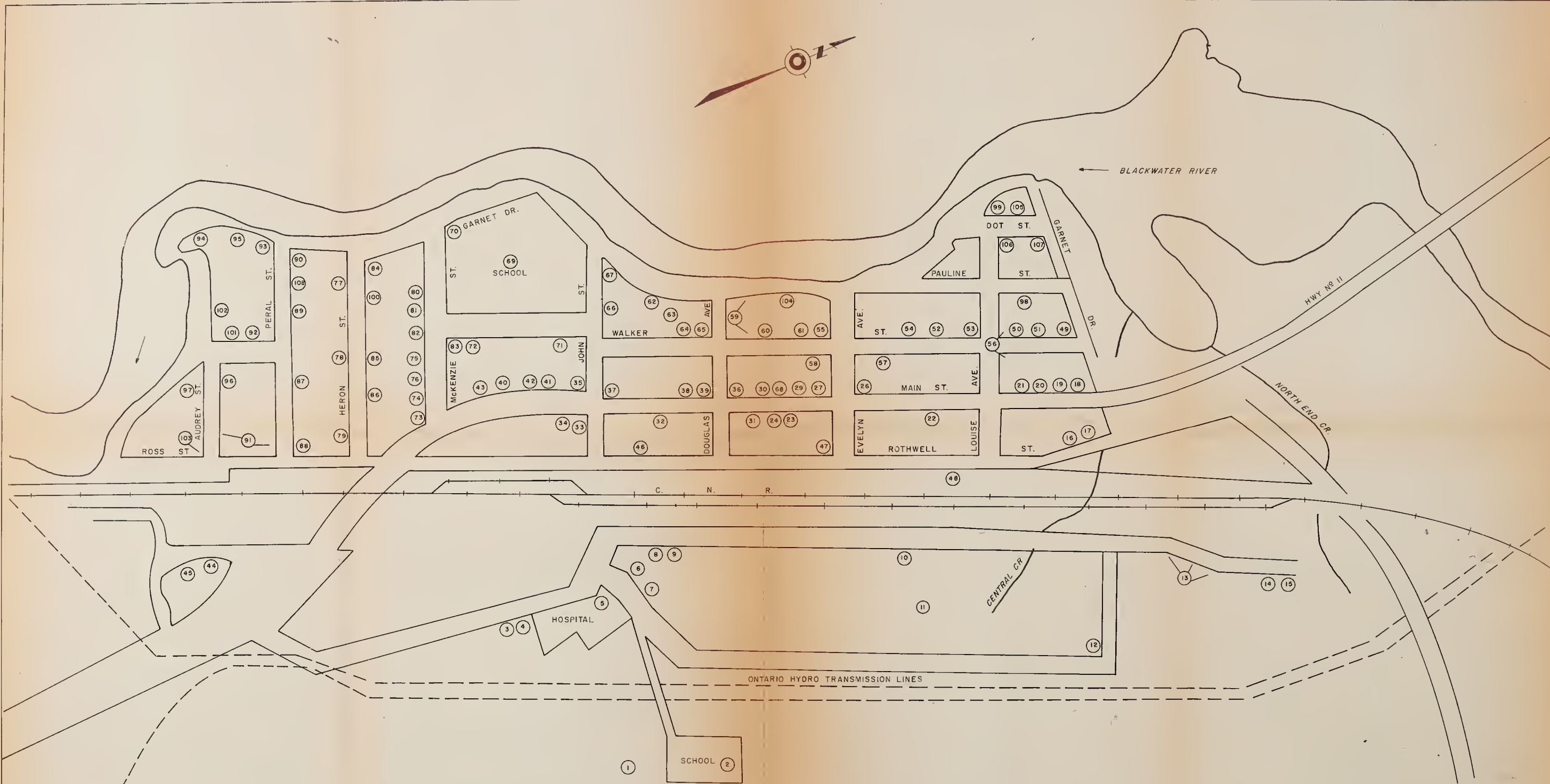
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LEGEND

- ② - DOMESTIC WATER SUPPLY
SAMPLING LOCATIONS

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COMMUNITY OF BEARDMORE	
SANITARY SURVEY - SAMPLING LOCATIONS	
JUNE 4-6, 1973	
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WATER POLLUTION AND SANITARY SUR-
VEY IMPROVEMENT DISTRICT OF
BEARDMORE, DISTRICT OF THUNDER BAY.

1973.

DATE	ISSUED TO
23/7/74	<i>W. Jackman</i> <i>118 Cedar St., Sud.</i>

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